

# SecureStack C2 PoE Redundant Power Supply C2RPS-POE Installation Guide



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**Caution:** Do not use this product with SecureStack C2 non-PoE devices. Any SecureStack C2 device without a “P” suffix in the model number (C2xxxx-xx) indicates a SecureStack C2 PoE non-compliant device and is not compatible with this power system.

**Precaución:** La fuente de poder C2RPS-POE no es compatible con switches SecureStack C2 que no cumplan con el estándar PoE. No intente conectar el cable de corriente de esta fuente de poder C2RPS-POE a ningún switch SecureStack C2 que no tenga el sufijo “P” en el nombre del modelo. (Ejemplo: C2G124-24.) De lo contrario, el dispositivo puede dañarse.

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Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**  
**EN 55022**  
**EN 61000-3-2**  
**EN 61000-3-3**  
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# About this Guide

This guide provides an overview, installation and troubleshooting instructions, and specifications for the Enterasys SecureStack C2RPS-POE power supply, which can provide a redundant power source to a SecureStack standalone POE switch.

## Using This Guide

Read through this guide completely to familiarize yourself with its contents and gain an understanding of the features and capabilities of the C2RPS-POE power supply. A general working knowledge of data communications networks is helpful when setting up a C2RPS-POE power supply.

## Structure of This Guide

This preface provides an overview of this guide and the SecureStack C2 manual set for PoE-compliant devices, and explains the symbols used throughout this manual.

**Chapter 1, Introduction**, discusses the features and capabilities of the C2RPS-POE power supply. This chapter also provides the instructions for obtaining help from Enterasys Networks, if needed.

**Chapter 2, Installation**, provides instructions to install a C2RPS-POE power supply into a standard 19-inch rack. This involves installing the C2RPS-POE power supply and one 48 Vdc interconnecting power cable, and AC power cord. Troubleshooting is also covered in this chapter.

**Appendix A, Specifications**, provides the specifications for the C2RPS-POE power supply, Redundant Power Supply connector pin-out description, C2RPS-POE Cable, and Compliance Standards.

## Using the SecureStack C2 Manual Set

Other manuals have been developed for the SecureStack C2 PoE switch devices that can be connected to the C2RPS-POE power supply for power redundancy.



**Caution:** The C2RPS-POE power supply does not support non-PoE compliant SecureStack C2 switches. Do not try to connect the power cable from this C2RPS-POE power supply to any SecureStack C2 stackable switch that does not have a “P” suffix in the model name, such as C2G124-24. Otherwise, damage to the device may result.

**Precaución:** La fuente de poder C2RPS-POE no es compatible con switches SecureStack C2 que no cumplan con el estándar PoE. No intente conectar el cable de corriente de esta fuente de poder C2RPS-POE a switch SecureStack C2 que no tenga el sufijo “P” en el nombre del modelo. (Ejemplo: C2G124-24.) De lo contrario, el dispositivo puede dañarse.

The SecureStack C2 switch manuals explain how to install the switch device, connect network cable segments to the SecureStack C2 switch device, and configure the switch device using the command line interface commands described in the *SecureStack C2 Configurator Guide*.



**Note:** Connection of the C2RPS-POE power supply does not require the reconfiguration of the connected Ethernet Switch.

Each manual is written for qualified personnel who are responsible for installing the switch device and also have a general working knowledge of data communications networks and their physical layer components.

The manuals can be accessed on the World Wide Web, using the following URL:

<http://www.enterasys.com/support/manuals/>

## Conventions Used in This Guide

The following conventions are used in this guide:



**Note:** Calls the reader's attention to any item of information that may be of special importance.



**Caution:** Contains information essential to avoid damage to the equipment.

**Precaución:** Contiene información esencial para prevenir dañar el equipo.

**Achtung:** Verweist auf wichtige Informationen zum Schutz gegen Beschädigungen.



**Electrical Hazard:** Warns against an action that could result in personal injury or death due to an electrical hazard.

**Riesgo Electrico:** Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

**Elektrischer Gefahrenhinweis:** Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!



**Warning:** Warns against an action that could result in personal injury or death.

**Advertencia:** Advierte contra una acción que pudiera resultar en lesión corporal o la muerte.

**Warnhinweis:** Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!





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## *Introduction*

This chapter provides the following information:

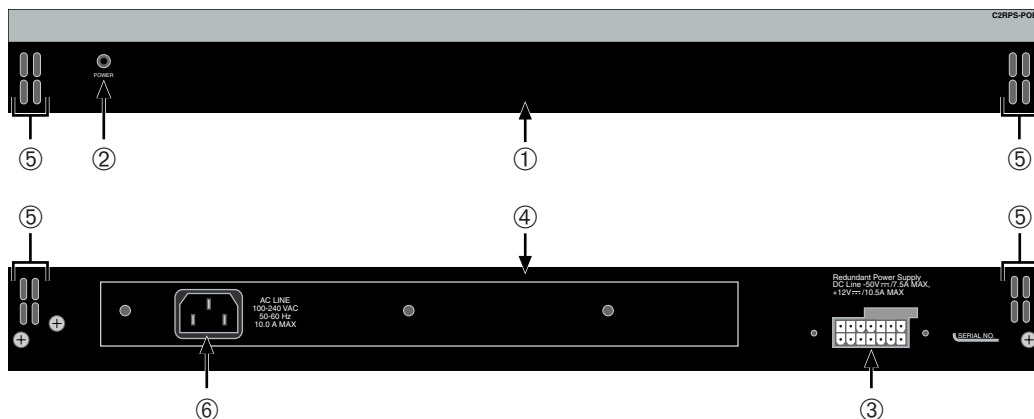
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## C2RPS-POE Overview

The purpose of the C2RPS-POE is to provide power backup to an Enterasys SecureStack C2 PoE-compliant stackable switch. If for some reason the switch loses power from its internal power supply, the C2RPS-POE can provide up to 500 Watts maximum operating power to support switch operation and the 48 Vdc necessary to support 48 Vdc/data connections to PDs (Powered Devices).

The C2RPS-POE is shown in [Figure 1-1](#).

**Figure 1-1 SecureStack C2RPS-POE (front and rear view)**



- |                                    |                            |
|------------------------------------|----------------------------|
| 1 C2RPS-POE (front view)           | 4 C2RPS-POE (rear view)    |
| 2 LED status indicator             | 5 Air vents for cooling    |
| 3 Redundant Power Supply connector | 6 AC power input connector |

## C2RPS-POE Status LED

The C2RPS-POE has one status LED located on the front panel, which indicates the following:

- LED on = RPS operating properly
- LED off = RPS failed

## Power Classifications and Deployment

Each PD has a Power Classification that indicates how much power it will consume as shown in [Table 1-1](#). This information is sent through the data cable connected to the port of a SecureStack PoE switch for power management purposes. The C2RPS-POE can supply up to 500 Watts of power, 370 Watts maximum to support PD connections and 130 Watts for switch operation. The 370 Watts is managed separately from the 130 Watts for switch operation.

The number of PDs that can be supported by the connected SecureStack PoE switch can be estimated by adding up the maximum power requirement of each connected PD according to their Power Classification rating (0 through 4).



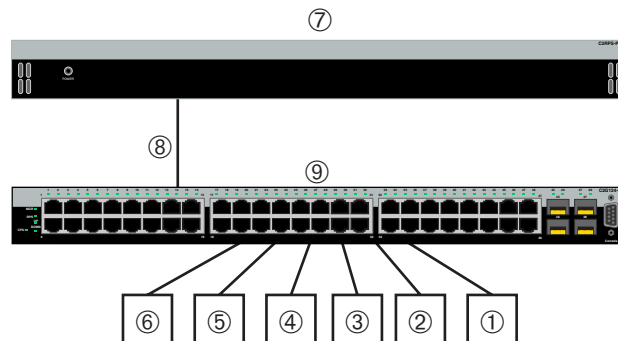
**Note:** Use the highest power rating of PoE Power Class of each PD to calculate the maximum wattage. For example, such as 12.95 for a Class 0 device.

**Table 1-1 Powered Device (PD) PoE Power Classifications**

Class	Usage	PD Maximum Power Range Usage
0	Default	0.44 to 12.95 Watts
1	Optional	0.44 to 3.84 Watts
2	Optional	3.84 to 6.49 Watts
3	Optional	6.49 to 12.95 Watts
4	Not Allowed	Reserved for Future Use

The example of a simple configuration shown in [Figure 1-2](#) has the 48 Vdc output port from a C2RPS-POE connected to a SecureStack PoE switch (such as Enterasys Networks' C2G124-48P). The C2RPS-POE connection provides the 48 Vdc and the power supply status (indicates if the power supply is okay) to the SecureStack PoE switch, which manages the 48 Vdc output to the six PDs.

**Figure 1-2 Example of a C2RPS-POE Power Configuration**



- |                               |  |
|-------------------------------|--|
| 1 Device is non-PoE compliant | 6 PD, Class 4                          |
| 2 PD, no Class rating         | 7 C2RPS-POE                            |
| 3 PD, Class 2                 | 8 48 Vdc/Status cable (DFE-POE-CBL-2M) |
| 4 PD, Class 2                 | 9 DTE, N-PoE-compliant switch module   |
| 5 PD, Class 0                 |  |

The SecureStack PoE switch has six of its PoE/data ports connected to PDs with the following Class ratings:

- One does not support PoE (no power)
- One has no Class rating (Defaults to Class 0, 12.95 Watts maximum)
- Two are Class 2 (6.49 Watts maximum  $\times$  2 = 12.98 Watts total)
- One is Class 0 (12.95 Watts maximum)
- One is Class 4 (defaults to 12.95 Watts maximum)

The maximum power needed from the C2RPS-POE is 51.83 Watts for the PDs, which is far below the maximum of 370 Watts.

## Getting Help

For additional support related to the device or this document, contact Enterasys Networks using one of the following methods:

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World Wide Web	<a href="http://www.enterasys.com/support">http://www.enterasys.com/support</a>
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**Before contacting Enterasys Networks for technical support, have the following information ready:**

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (for example, changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

## Installation



**Electrical Hazard:** Only qualified personnel should perform installation procedures.

**Riesgo Electrico:** Solamente personal calificado debe realizar procedimientos de instalacion.

**Elektrischer Gefahrenhinweis:** Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter provides the installation instructions to install all the components of a C2RPS-POE.

To correctly install the C2RPS-POE, follow the order of information listed below.

For information about...	Refer to page...
<a href="#">Required Tools</a>	2-1
<a href="#">Unpacking the C2RPS-POE</a>	2-2
<a href="#">Installing the C2RPS-POE on a Flat Surface</a>	2-2
<a href="#">Rack Mounting the C2RPS-POE</a>	2-5
<a href="#">Connecting C2RPS-POE Cable and AC Power Cord</a>	2-7

### Required Tools

A Phillips screwdriver is required to install the C2RPS-POE.

## Unpacking the C2RPS-POE

To unpack the C2RPS-POE, proceed as follows:

1. Open the box and remove the packing material protecting the devices.
2. Verify the contents of each carton and compare the contents shipped with those listed in [Table 2-1](#).
3. Perform a visual inspection of the devices for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to [“Getting Help”](#) on page 1-4 for details.

**Table 2-1 Contents of N-POE Chassis Carton**

Item	Quantity
C2RPS-POE Cable	1
Rubber Foot	4
Flathead screw M3x6	6
Rack mount bracket	1
USA, NEMA Power Cord	1
Installation guide	1
Release Notes	1

## Installing the C2RPS-POE on a Flat Surface



**Caution:** Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

**Precaución:** Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

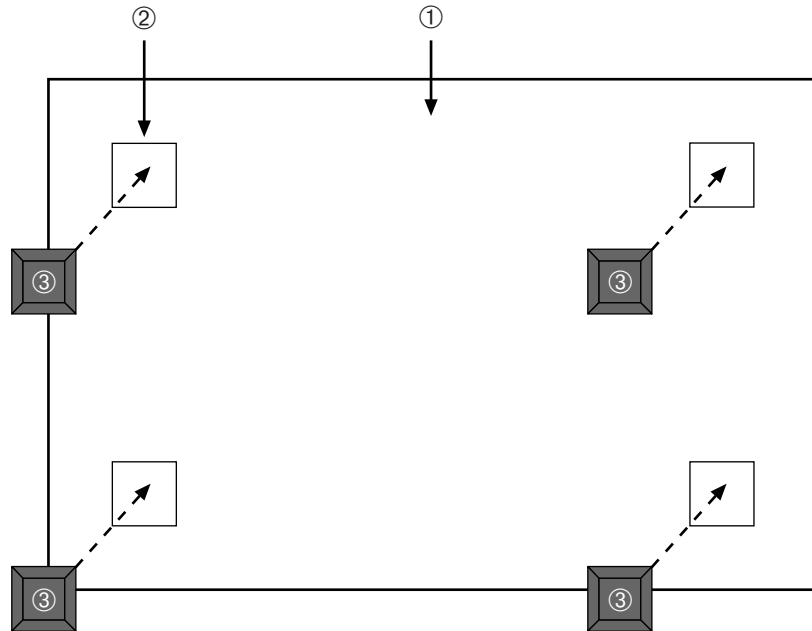
When installing the switch on a flat surface, the installation of the rubber feet is recommended to prevent the C2RPS-POE from sliding on a flat surface. Installing the rubber feet is optional if you are installing the C2RPS-POE in a rack. To install the rubber feet, proceed to [Installing the Rubber Feet](#) instructions below. For instructions to rack mount the switch, proceed to [“Rack Mounting the C2RPS-POE”](#) on page 2-5.

## Installing the Rubber Feet

To install the rubber feet, refer to [Figure 2-1](#) and proceed as follows:

1. Place the C2RPS-POE on its back on a sturdy flat surface to gain access to the bottom of the chassis.
2. Remove the four rubber feet from their plastic bag in the shipping box.
3. Locate the four marked locations on the bottom four corners of the C2RPS-POE.

**Figure 2-1 C2RPS-POE Bottom, Rubber Feet Placement**



- |  |   |
|--|---|
| 1 Bottom of C2RPS-POE                                | 3 Rubber feet with adhesive backing (4) |
| 2 Locations to install the rubber feet (4 locations) |   |

4. Remove the protective strip from the back of one rubber foot and position it on a marked location and press firmly into place. Repeat this procedure to install the remaining three rubber feet.
5. After installing the rubber feet, return the C2RPS-POE to its upright position.
6. To install the C2RPS-POE on a flat surface, proceed to [“Installing the C2RPS-POE on a Flat Surface”](#) on page 2-2. For a rackmount installation, proceed to [“Rack Mounting the C2RPS-POE”](#) on page 2-5.

## Guidelines for Installation

Locate the C2RPS-POE within 152 cm (5 ft) of its power source and on a surface as shown in [Figure 2-2](#).



**Caution:** To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 5.1 cm (2.0 in.) at the left, right, and rear of the switch.

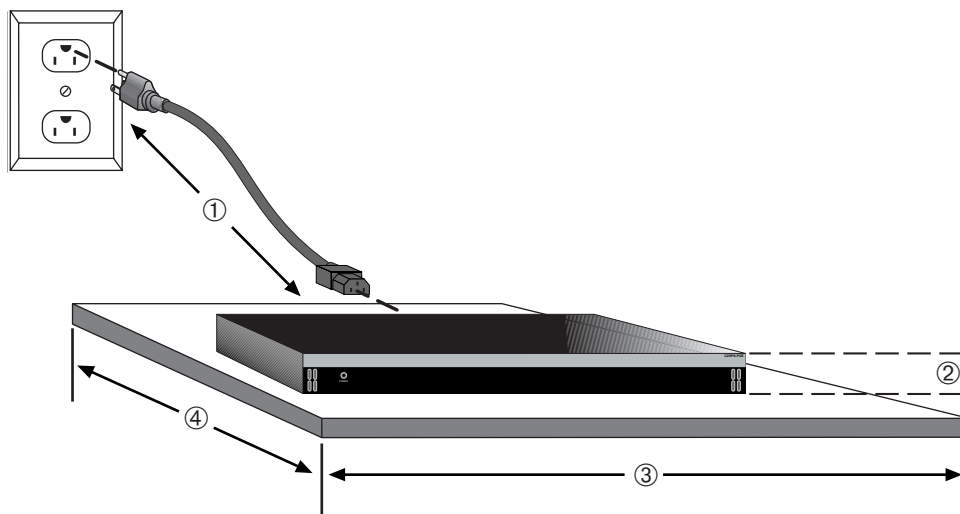
Do not connect the switch to the AC power source until instructed to do so later in the installation process

**Precaución:** Para asegurar una buena ventilación y evitar que el sistema se sobrecaliente, deje un espacio mínimo de 5.1 cm (2 pulgadas) con respecto a los lados y a la parte posterior del aparato..

No conecte la fuente del poder a la fuente primaria hasta que no se le indique.

If the switch is being installed as a standalone switch, proceed to “[Connecting C2RPS-POE Cable and AC Power Cord](#)” on page 2-7 for power connection instructions.

**Figure 2-2 Area Guidelines for C2RPS-POE Installation on Flat Surface**



- |   |   |   |   |
|---|---|---|---|
| 1 | Approximately 152 cm (5 ft) from power source   | 3 | 49.5 cm (19.5 in.) for proper ventilation |
| 2 | 4.45 cm (1.75 in.) per C2RPS-POE (Vertical clearance depends on number of devices stacked.) | 4 | 21.5 cm (8.5 in.) for proper ventilation  |



## Rack Mounting the C2RPS-POE



**Caution:** Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

**Precaución:** Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

To install the switch in a 19-inch rack, you need:

- Two rackmount brackets and mounting screws (rackmount kit) shipped with the switch.
- Four user-supplied screws to attach the switch to a standard 19-inch rack.

### Guidelines for Rackmount Installation

The installation site must be within reach of the network cabling and meet the requirements listed below:

- Appropriate grounded power receptacles must be located within 152 cm (5 feet) of the location.
- A temperature of between 5°C (41°F) and 40°C (104°F) must be maintained at the installation site with fluctuations of less than 10°C (18°F) per hour.



**Caution:** To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 5.1 cm (2.0 in.) at the left, right, and rear of the switch.

Do not connect the switch to the AC power source until instructed to do so later in the installation process.

**Precaución:** Para asegurar una buena ventilación y evitar que el sistema se sobrecaliente, deje un espacio mínimo de 5.1 cm (2 pulgadas) con respecto a los lados y a la parte posterior del aparato.

No conecte la fuente del poder a la fuente primaria hasta que no se le indique.



**Warning:** Before installing the chassis into a rack, ensure that the rack can support the device(s) without compromising the stability of the rack. Otherwise, personal injury and/or equipment damage may result.

**Advertencia:** Antes de instalar el chasis en un rack, asegurarse que el rack puede soportar el(los) dispositivo(s) sin comprometer la estabilidad del mismo. De otra forma puede suceder algún tipo de daño personal o del equipo.

**Warnhinweis:** Schützen Sie sich vor Verletzungen und Geräteschaden, überzeugen Sie sich vor der Installation des Chassis in das Rack, von dessen Stabilität.

## Attaching Brackets and Installing in Rack

Proceed as follows to install the switch into a 19-inch rack:

1. Attach the rackmount brackets to the switch, as shown in [Figure 2-3](#), using the eight M3 x 6 mm flathead screws shipped with the switch.

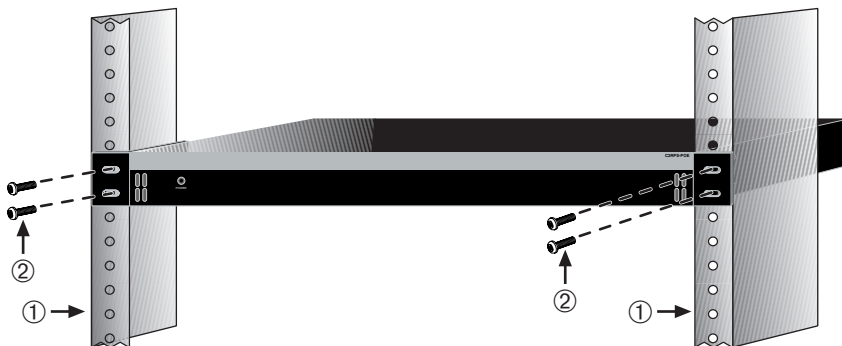
**Figure 2-3 Attaching the Rackmount Brackets**



- |                          |                                 |
|--------------------------|---------------------------------|
| 1 Rackmount brackets (2) | 2 M3 x 6 mm flathead screws (8) |
|--------------------------|---------------------------------|

2. With the mounting brackets attached, position the switch between the vertical frame members of the 19-inch rack as shown in [Figure 2-4](#). Then fasten the C2RPS-POE securely to the frame using four mounting screws (user supplied).

**Figure 2-4 Fastening the C2RPS-POE to the Rack**



- |                         |                                      |
|-------------------------|--------------------------------------|
| 1 Rails of 19-inch rack | 2 Mounting screws (supplied by user) |
|-------------------------|--------------------------------------|

3. If you are installing the C2RPS-POE in a stacked configuration, repeat this procedure for each C2RPS-POE, then proceed to [“Connecting C2RPS-POE Cable and AC Power Cord”](#) on page 2-7.

## Connecting C2RPS-POE Cable and AC Power Cord

The C2RPS-POE is connected to the SecureStack PoE switch using a C2RPS-POE cable, as follows:

1. Connect one end of the C2RPS-POE (shown in [Figure 2-5](#)) to the Redundant Power Supply connector on the switch device. Then connect the other end to the Redundant Power Supply connector at the rear of the C2RPS-POE as shown in [Figure 2-6](#) and [Figure 2-7](#).
2. Connect a standard AC power cord to the AC input power connector on the C2RPS-POE shown in [Figure 2-6](#), then plug the AC power cord into the main AC power outlet.
3. The green Power LED on the front of the C2RPS-POE will glow to indicate a successful connection and the C2RPS-POE is operating properly. If the LED remains off, refer to [Table 2-2](#) for the recommended action.

**Table 2-2 C2RPS-POE Status LED Indications and Recommended Actions**

LED	Color	State	Recommended Action
AC power LED	Green	<p><b>Solid</b> - AC input to power supply is within specifications.</p> <p><b>Off</b> - AC input power to power supply is out of specification.</p>	<p>None</p> <ol style="list-style-type: none"> <li>1. Check AC power cord connection to the power supply.</li> <li>2. Check AC power at the power outlet.</li> <li>3. Swap power cord for a known good one.</li> <li>4. Remove or replace affected N-POE PSM.</li> <li>5. Contact Enterasys Networks for support. Refer to <a href="#">“Getting Help”</a> on page 1-4 for instructions.</li> </ol>

4. If two or more power supplies are being installed, repeat steps 1 through 3 for each C2RPS-POE.

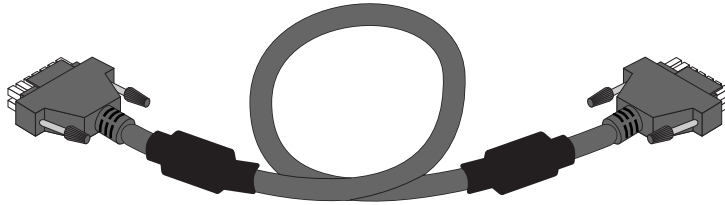
On certain switches, an LED indicator will show that a redundant power supply is connected and operating.



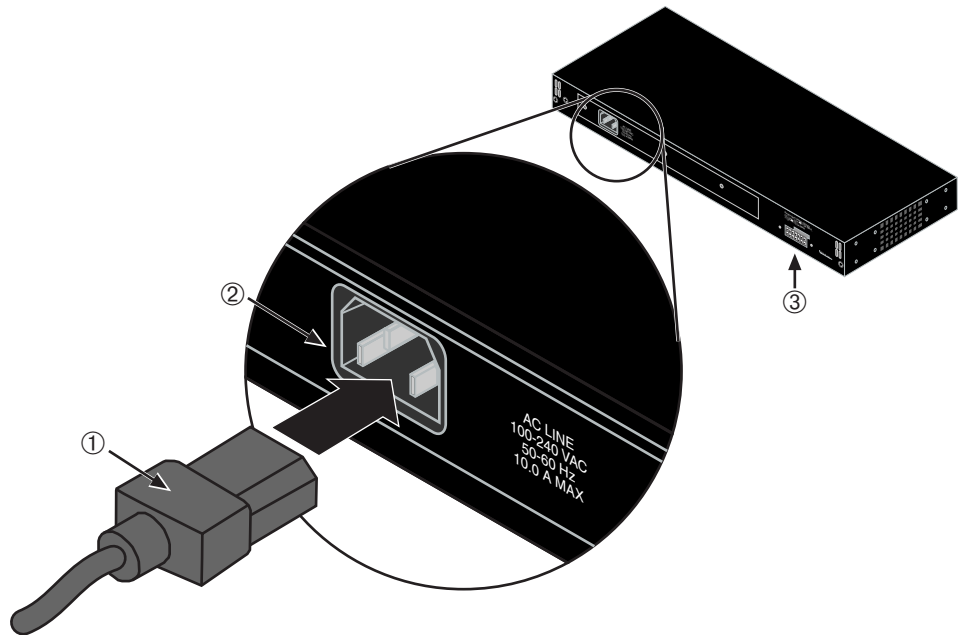
**Note:** No change in switch configuration is necessary for this installation.

If you need additional help, contact Enterasys Networks. Refer to [“Getting Help”](#) on page 1-4 for instructions.

**Figure 2-5 C2RPS-POE Cable**

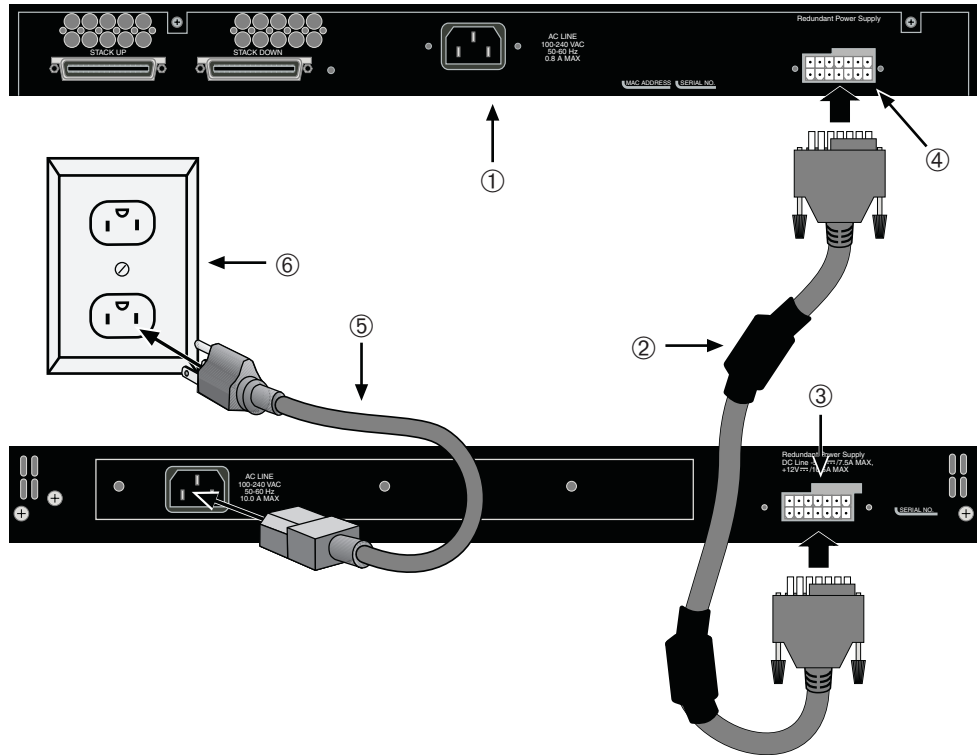


**Figure 2-6 Power Connector on C2RPS-POE (rear view)**



- 1 AC power plug
- 2 AC power connector

- 3 Redundant Power Supply connector

**Figure 2-7 C2RPS-POE Cable and AC Power Cord Connections**

- |   |   |
|---|---|
| 1 Switch device                                     | 4 Switch device Redundant Power Supply connector                            |
| 2 C2RPS-POE Cable                                   | 5 AC power cord (type varies depending on country)                          |
| 3 C2RPS-POE Redundant Power Supply output connector | 6 AC power outlet with ground connection (type varies depending on country) |

If you need additional help, contact Enterasys Networks. Refer to [“Getting Help”](#) on page 1-4 for instructions.





# Specifications

This appendix provides information about the following:

For information about...	Refer to page...
<a href="#">C2RPS-POE Specifications</a>	<a href="#">A-1</a>
<a href="#">C2RPS-POE Redundant Power Supply Output Connector</a>	<a href="#">A-2</a>
<a href="#">Compliance Standards</a>	<a href="#">A-3</a>

Enterasys Networks reserves the right to change the specifications at any time without notice.

## C2RPS-POE Specifications

The following sections describe the input/output port specifications as follows:

**Table A-1 C2RPS-POE Specifications**

Item	Specification
<b>Electrical</b>	
AC Input Frequency Range	47 - 63 Hz
AC Input Voltage Range	90 - 264 Vac
AC Input Current	10 A maximum at 115 Vac, 60 Hz 5.0 A maximum at 230 Vac, 50 Hz
DC Output	-50 Vdc, 7.5 A maximum +12.0 Vdc, 1.0 A minimum, 10.5 maximum
Maximum Output Power	500 W

**Table A-1 C2RPS-POE Specifications (continued)**

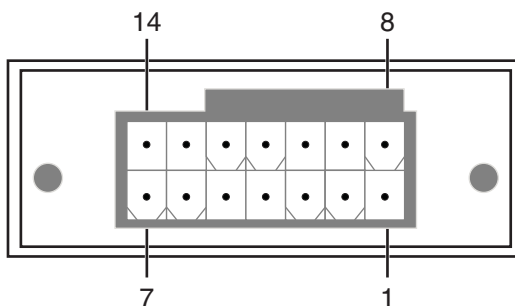
Item	Specification
<b>Physical</b>	
Dimensions	4.45 H x 44.5 W x 16.5 D (cm)
	1.75 H x 17.5 W x 6.5 D (in.)
Net Weight (unit only)	3.47 kg (7.63 lb)
Gross Weight (1 unit and packaging)	4.95 kg (10.89 lb)
MTBF	589,644 Hours at 25°C (77°F)
<b>Environmental</b>	
Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity	10% to 90%

## C2RPS-POE Redundant Power Supply Output Connector

For pin location and function, refer to [Figure A-1](#) and [Table A-2](#), respectively.



**Note:** The following information is for troubleshooting purposes only. For proper operation, do not use any other cable except the C2RPS-POE Cable. This cable is specially designed for this application and meets all necessary Regulatory and Safety standards. The use of non-approved cables will void your warranty.

**Figure A-1 C2RPS-POE Redundant Power Supply Connector Pin Locations**



**Table A-2 C2RPS-POE Redundant Power Supply Connector Pin Functions**

Pin Number	Function
1	- 50 V return
2	- 50 Vdc
3	12 Vdc output
4	12 Vdc output
5	12 Vdc output
6	12 Vdc output
7	Ground
8	Ground
9	No connection
10	RPS present
11	Status 1
12	Status 2
13	Power good
14	Ground

## Compliance Standards

The C2RPS-POE meets the safety and electromagnetic compatibility (EMC) requirements listed in [Table A-3](#):

**Table A-3 Compliance Standards**

Item	Standard
Safety	UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, and IEC 60950
Electromagnetic Compatibility	47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024; AS/NZS CISPR 22, and VCCI V-3

